do. That's part of what helped CelPlan converge on the right implementation much more rapidly, we believe, than they might have done if there hadn't been somebody, as it were, looking over their shoulder and helping them. We see our function in this as, essentially, providing a quality control role. And so, we were doing it in that spirit, and just helping to bring it to a better resolution, or better accuracy as quickly as possible.

MR. SCHWARTZ: All right ---

MR. WEIS: In fact, you might that software that we were working with pre-Alpha. If you think of Alpha level and Beta level software, you know, some of those were pre-Alpha.

MR. SCHWARTZ: When would you say Beta level was achieved, in terms of time?

Mr. WEIS: I'd call that probably the April time frame.

MR. SCHWARTZ: And when would you say that -- I guess, the software jargon for final stuff is "gold." When would you say gold was achieved?

MR. WEIS: That's probably got to be June, when you have the software that deals with the last revisions to the methodology.

MR. SCHWARTZ: So the June 2 date for the gold

version?

MR. WEIS: I mean, putting it in your terms, I guess that's what I'd have -- where I'd have to pin it.

MR. SCHWARTZ: Okay. Any audience questions?

OPERATOR: Yes. We have a question from Michael Kelly of George Mason University.

MR. KELLY: Yes. Dr. WEIS, I'm interested in your point about the software perfected enough not to have to wait. But I'm also concerned about the presentation that the man from Carl Jones Associates gave us, which was not so much a question about the perfection level of the software, but rather, the sheer time it takes to process the necessary applications for the various clients. And I wanted to get your thoughts on that in terms of a reason for perhaps delaying the window.

MR. WEIS: Well, let me just say a couple of things. We ran some pretty fast computers, and the times that we're seeing are akin to the kinds of times that Leonhard Korowajeeuk mentioned as to what it takes to run the process. So it depends on how many clients you're trying to serve, and how complex their designs are, how long it will actually take. It also depends on how large a group of people you have working on it, and whether or not all of them have the same level of equipment to be able to run it

that rapidly.

Of course, when you look at personnel versus computers, in the large systems where it takes a long time to run, it pays to have multiple computing systems per engineer because, then you can be setting up one machine while another one is running.

In the end, it seems to me that if you find that you can't meet the requirements or meet the needs of your clients in order to meet a window, you do what we do, and you refer them to somebody else.

MR. KELLY: Thank you very much.

MR. WEIS: And that's the ultimate service is to say what does my client need, and I'll find a way to get it done, whether I can do it or somebody else can do it.

MR. SCHWARTZ: All right. We're going to move on to our next presenter now. There will be opportunities to ask further questions of Merrill in the general comments section that will follow the initial presentation.

Our fourth presenter is Harry Anderson. Harry is the President of EDX, a software manufacturer. And Harry's full bio is found on the www.itfs.org web site. Harry?

MR. HICKS: Actually, this is Ted Hicks. Harry has not come in this morning, or yet. So I'm going to go ahead and fill in for him. Hopefully, he'll be able to

joint us a little bit later on.

I want to thank John for introducing ---

(End of Tape Side A; Beginning of Tape Side B.)

MR. HICKS: I've been with him for about five years, and I'm also involved daily with the MMDS process, as far as dealing with our customers. And I also led the -- our training seminar we held recently in Washington, D.C. So I'm very much up to speed on the whole MMDS area. So that's why I'm filling in this morning.

To begin with, I'd like to say that EDS does support the petition that's been filed with the Commission asking for the push-back of the filing window, and we support this effort because we have been using our software through our many customers to file applications with -- for FCC applications in a number of different industries for the last 15 years. And so, we understand a lot of the complexities of the time it takes to do these applications.

The petitions that have been filed with the Commission give a number of good reasons for reconsideration of the filing window dates. So I'm not going to repeat them there. But there are two issues that we'd like to comment on. One is the nature of creating planning tools for this type of process, and the second one is why more time is needed to do the actual processing once the tool has been

put together.

To begin with, a couple of the petitions note that, although the rules for the two-way analysis method have been in place for a number of months, the well-known Appendix D, which prescribes a method, was revised as recently as April 27th. And so, to accommodate these changes and ensure that the planning tools contain provisions for the latest rules and methods, the release dates for both our tool and the CelPlan tool was really the middle of May.

And then, once the tools were in the hands of customer, we, of course, began receiving feedback and finding clearer interpretations of the rules and methods. So we continued to make modifications and enhancements to the tool.

Our last release of the code was on June 5th. And we're confident that that's a solid and accurate release. So it was, essentially, only last week when the final phase could be done to confirm that everything was correct with respect to the method. CelPlan has indicated that June 2nd was essentially their final release date. So, really, they're on the same approximate development track as we are.

We assume that it's prudent that you'd want to go look at those studies that were run previous to the June

release date, and rerun them, where necessary, to make sure that the answers haven't changed because of minor changes or whatever in the software code.

And as it's been mentioned, software isn't complete ever. It's never 100 percent free of problems. And we would expect that there are going to be some continuing issues that come up, and there will be times when, possibly, some other studies need to be rerun in the future just to make sure that the answers haven't changed.

And secondly, what we feel is an issue is that the FCC, as Merrill has said, has adopted a very complex analysis process. It takes into account a lot of design variables and system parameters. We have circular PSA's, irregular PSA's, polygons in RSA's, and circular RSA's, regions, sectors, groups, classes, et cetera, et cetera. And so, there's a lot of variables in this whole process, and all of this analysis needs to be done on a point-to-point basis.

So we take all these variables. We put them on a point-to-point basis where have hundreds, literally thousands of points, in some cases, on one ends, and at least hundreds of points on the other end. We're running all these link studies back and forth between these points. And there's just -- there's huge amounts of computer time

involved here in doing these studies.

And even if you go back and you make a minor change to, for example, say, the shape of your RSA, many times, the number of grid points that you're dealing with in the analysis will change dramatically from, say, maybe a few hundred grid points to several thousand grid points just because you've made a minor change in your study type.

So all of this is going to take time to run these initial studies. And, of course, it's also reasonable to assume that the initial designs are going to -- not going to be without problems. And so, you're going to have to rerun those studies again maybe two or three times to work out the interference issues. And so, again, just all of this really just takes a lot of time.

So, from these two issues, the relatively recent release of the fully-functional tools, the long processing time that they all -- that they both take, is going to contribute to delays in preparing applications. And so, it's going to make it difficult for anybody to -- or impossible to prepare complete and accurate applications in time for the filing of the current window.

I mean, we're confident here at EDX that the consultants and operators that are doing the work can get it done properly. But we need to recognize the realities of

the complex nature of the process, and the tremendous amount of work that still needs to be done. Thanks.

MR. SCHWARTZ: Thanks very much. Do we have audience questions?

OPERATOR: Not at this time. I'll remind everyone -- Well, we do have a question from Fay Cover?

MR. SCHWARTZ: Yes, Fay?

MS. COVER: Given that you said that you would support the postponement of this due to the complexity of the software and such, do you support a six month, or a shorter time frame? What would that time frame be, in your opinion?

MR. HICKS: We really don't have a good feel for that because that's really going to be up to the consultants. Really, they're the ones who know exactly how much work has to be done, and how much time is going to be needed to get the process completed.

MR. SCHWARTZ: Do we have another audience question?

OPERATOR: Not at this time. I'll remind everyone to press Star 1.

MR. SCHWARTZ: Let me fill in with a question while we're waiting for our next audience call. One of the issues that I think has come up quite a bit is running

repeated studies and getting different results on essentially the same study. Have you tried to replicate studies using EDX software, and do you find that you get different results for the same study?

MR. HICKS: In the earlier versions back in May, we were running into that. And again, these were software issues where work files that you generate, you have to make sure that when you rerun the study, you go back and erase the original work files so you get, you know, new answers, and you're not just pulling up old work files.

Our tool, we generate a tremendous number of work files to try to, you know, cut down the processing time wherever possible so we can reuse data that doesn't have to be recalculated twice. But in doing so, you have to be very careful to make sure you get rid of those files the next time you run the process.

So we ran into a few issues like that, but we think that we've gotten rid of all of those issues. And now, when we rerun the studies, you know, two, three, whatever times, we're always coming up with the same answers.

MR. SCHWARTZ: Have you run any tests on interoperatibility between EDS and CelPlan?

MR. HICKS: We've done a little bit of it. We

have the ability to both read and write the RSA file format as described in Appendix D. So we're been a few RSA files that were generated by the Celplan tool, and bring them and, you know, run them just make sure we could actually read the RSA files. We ran into a few reading errors and, you know, so we're working on those now. And we've also given the errors we found back out to our consultants so they can, you know, look at that to see if it was -- where the problem actually lies.

And so, we've been able to run studies. Unfortunately, obviously, we don't have the CelPlan tool here. We can't run a comparison. But we're hoping that a couple of our customers who have both tools will be able to do that and give some feedback, I think, to both CelPlan and ourselves. So that would be valuable.

MR. SCHWARTZ: Now, what sorts of errors were you advising your customers about?

MR. HICKS: Which, in the RSA file?

MR. SCHWARTZ: Right.

MR. HICKS: There were some significant fundamental errors in the file format, as far as like some of the sections have a header line that says, well, how many -- for example, how many sectors are in this section. And that header line was missing. So there was no way to

know, by reading the RSA file, how many sectors were involved without actually going through and counting them up, and then, adding that line back in again. So there were about four or five instances where we found errors in the file.

MR. SCHWARTZ: And how recently did you find these errors?

MR. HICKS: That was as recently as a couple weeks ago.

MR. SCHWARTZ: How are we doing on questions from the audience?

OPERATOR: We have a question from Phil Duncan of NCOC.

MR. HICKS: Yes, Phil?

MR. DUNCAN: My question is, in a market, if software has been run and produced results for certain channels, how much more effort does it take to include all the channels, all the licensees in that market? Is there some extra level of complexity that makes it impossible to include all the channels in a, say medium-sized market? Is there not time for that, or -- I'm just curious as to why, you know, the filings that are apparently going to be done are not involving all licensees in most markets?

MR. HICKS: I'm not sure why they wouldn't include

all the licensees because it seems like, you know, you have a possibility of interference from any of them. But the reason, the primary reason that everybody doesn't run all the channels, again, is a time issue. It's just that the process is cumbersome and slow. And so, the more channels you involve or the more transmitters you put in, you know, the more time it takes. And so, we're just trying to get things -- obviously, people want to get things done as efficiently as possible. And that's why they do it the way they do it.

There's no reason, as far as the tools are concerned, why it couldn't be done because, essentially, it's all done on a, you know, step-by-step basis anyway. And whether you take, you know, 10 steps to do something or 1,000 steps, the software doesn't care. So that part doesn't matter.

MR. DUNCAN: So you're saying it's just a function of time?

MR. HICKS: Yes.

MR. DUNCAN: If I understand you right, you should be able to include all the channels in a market if you had more time?

MR. HICKS: That's correct.

MR. DUNCAN: And if that was your desire?

MR. HICKS: Correct.

MR. DUNCAN: I understand. Thank you.

OPERATOR: There are no further audience questions.

MR. SCHWARTZ: All right. Let's move on to our last presentation. This is Bob Gehman. Bob is a long-time practicing consulting engineer with many ITFS clients, and his full bio is on line at www.itfs.org. Bob?

MR. GEHMAN: Thanks, John. I appreciate this opportunity to address the two-way software issue and voice my support for the AFCC petition requesting the delay of the filing window.

For more than 35 years, our firm has had clients primarily consisting of non-commercial educational entities and independent entrepreneurs engaged in broadcasting ITFS and MDS. The situation we have before us is rather unusual. In more than 20 years of running this business, I've never had to turn away our clients for the reasons I'm about to explain.

We have an FCC filing opportunity of July 10. And, of course, no one wants to be excluded. The filing requirements are mostly technical and require certification of completeness and accuracy. If you sign the FCC Form 331, you are certifying that what you're filing is complete and

accurate, to the best of your knowledge.

Most ITFS licensees that come to us for work, they want to know what the engineering fee is in advance so that they can go to their administration and get purchase orders. They all want assurances that we'll be able to meet the deadline.

Now, I wrote the programs that we currently use for conducting conventional MDS and ITFS interference studies, and I even attempted to write code for the two-way analysis, but I soon discovered that software necessary to meet the Appendix D requirements was beyond my programming capabilities. We are primarily engineers, and not software developers.

As a result, we could give our clients a fee or a promise to meet the deadline. So we asked them to wait a little longer. We asked them to wait because we knew the software was under development, not because we were too greedy to refer them to another firm. We were familiar with EDX, and eventually, became aware of CelPlan. I knew it would be a very complex tool, and I knew it would take quite a bit of time to develop the software and debug to make sure that they were running properly.

It's already been mentioned on a number of occasions that Appendix D, the methodology for preparing the

studies, was revised in late February, and again at the end of April. That is just 70 days before the filing deadline.

Our clients are expecting us to evaluate interference studies served on them, and we fully intend to do that. Some of them may be asked by Sprint or MCI, the primarily filers in this window as it would appear, to provide consent letters prior to filing.

Unfortunately, the software cannot read, reliably, apparently, the required Appendix D file to permit us to make the studies. So at this point, the data would have to be entered by hand in order to respond to a request for a consent prior to the window deadline. Unless the software is upgraded, the same would be true for the amendment and petition to deny cycles.

I believe the unfortunate chain of events has effectively reduced the FCC's public notice of the filing window to about 30 days, certainly not sufficient time for an engineering firm to guarantee performance to a number of clients waiting in the wings.

ITFS licensees and independent MDS licensees are entitled to better treatment. They should expect service when they need it, delivery on time, and a way to evaluate the impact of a neighboring two-way system. A reasonable delay of the filing deadline would help to level the playing

field for ITFS and MDS licensees. I support the AFCC petition for a delay of the filing window.

And that concludes my introduction.

MR. SCHWARTZ: Thanks very much, Bob. Do we have an audience question?

OPERATOR: Not at this time.

MR. SCHWARTZ: Bob, is it possible, in your experience, to run studies -- Let's say that the proponent for a two-way application runs a study, files it with the Commission as part of an application. This is then farmed out by a neighboring licensee to a consulting engineer to evaluate. The consulting engineer tries to replicate the initial study, which presumably would show non-interference. And you're not able to replicate it. You get a different answer.

MR. GEHMAN: Is that the question?

MR. SCHWARTZ: Yes.

MR. GEHMAN: Do I believe I might get a different answer?

MR. SCHWARTZ: Yes.

MR. GEHMAN: I think there's a very good chance of getting a different answer, yes.

MR. SCHWARTZ: And so, one might show no interference, and then, the effort to replicate it would

show interference, presumably?

MR. GEHMAN: That's correct. That's correct.

MR. SCHWARTZ: So then, you'd be in a situation where you'd be -- there'd be two engineers that would be working with the same software. They'd be working in good faith, but they'd get different answers, and this could lead to a petition to deny?

MR. GEHMAN: That's right.

MR. SCHWARTZ: Well, how would you sort it out, since they're working with the same software, and they're both working in good faith?

MR. GEHMAN: That's a good question. The problem I think that we have is the lack of a manual, at least for the CelPlan tool at this point. There are lots of settings in the software, and one, you know, missed setting by not completely understanding what that particular setting does, it will give you results, but they may not be the right -- the correct results.

And the bottom line is, there just hasn't been enough time to really get familiar with the tools to be able to ask all the questions that are necessary to do a reliable job that somebody could certify with a filing with the FCC.

MR. SCHWARTZ: Are you talking about the settings, you know, when you run the software? Is there a right

setting and a wrong setting, or is there a spectrum of right settings that could lead to different results even though the, you know, the assumptions that go behind it are correct, but also different?

MR. GEHMAN: Well, I assume that there is a spectrum of correct settings. Obviously, you would want to try to select your initial setting to minimize the amount of time that it takes to generate the results.

On the other hand, you have to be careful because if you select that initial setting incorrectly, the software will generate results, but you won't know that you have the incorrect results.

MR. SCHWARTZ: And you say there's no written manual for CelPlan?

MR. GEHMAN: That's correct.

MR. SCHWARTZ: How about like a help function the way we get in software sometimes?

MR. GEHMAN: There's no help function available yet either.

MR. SCHWARTZ: Do we have any audience questions?

OPERATOR: We do. We'll now move on to William Anderly of Bell South?

MR. ANDERLY: I just wanted to make sure that I understood what you were telling everybody, Bob, relative to

the ability to export data, input it from, you know, if you're on the receiving end of an application, and you get it in electronic form, you know, can you plug it in? You mentioned something about having to key it in manually, and I've heard about that before.

I wanted to make sure that everyone understood what it is that you're saying on that. Could you go over that once again, and how that affects peoples' ability, even if they're passive in two-way, potentially to be able to protect themselves in the petition to deny period?

MR. GEHMAN: Basically, the software, as it's available today, does not have a module to read Appendix D. Appendix D, the Appendix D file that is attached to the application submitted to the FCC, and which will be served on the incumbents within 100 miles, that is a file with a specific format. And presumably, if the computer program has the ability to read an Appendix D file, it will read it correctly. But as it stands right now, the tool that we have does not have the capability of reading the file at all. The module is not there. It doesn't exist.

So if somebody wanted to check an two-way application that was served on them, they would have to enter that data manually in order to evaluate the true effects that two-way filing has on them.

MR. SCHWARTZ: Now, are we talking about a little data or a lot of data?

MR. GEHMAN: No, this is a -- This can be a huge file. It depends on the complexity of the two-way design.

MR. SCHWARTZ: Well, just in terms of time, what's a reasonable range of a low end and a high end?

MR. GEHMAN: Time to enter the data?

MR. SCHWARTZ: Um-hmm.

MR. GEHMAN: Oh, my gosh. If it was available in electronic format, you could probably do things like cut and paste. In other words, you could open it up into a document like Notepad or Word, or something like that, and you could cut and paste the data from that format into another one. If you use things such as Excel, you can rearrange columns. You can do a lot of data manipulation.

You know, I'm not suggesting that anybody's going to sit down and actually type in the numbers, although that is certainly one way to do it, as well.

MR. SCHWARTZ: Well, but you didn't tell me how much time?

MR. GEHMAN: And that's because I don't know. I have no idea. I don't -- If somebody asked us to do an evaluation today, I don't know if it would take one hour or 10 days.

MR. SCHWARTZ: Do we have further audience questions for Bob?

OPERATOR: We have one from Elizabeth Kraft of Arizona State University.

MR. CARTER: Hi, Bob. This is actually Roger Carter on behalf of Betty. You mentioned 30 days you thought was not a reasonable time period for an ITFS licensee to evaluate engineering that's been given to them by Sprint or MCI. And, of course, we're in that position, that we haven't received the engineering yet, either from them or from adjacent PSA's. And we couldn't, therefore, meet the July 10th window right now if we need that 30 days.

And you were implying, I thought, that it should be even longer. Can you comment on that at all?

MR. GEHMAN: Actually, the point that I was making about the 30 days is that from the time that the methodology was finalized and the software became available, based on that final revision, that there was effectively about 30 days left to the end of the filing window.

Now, if somebody asks an engineering firm to do an evaluation of an interference from a two-way application, for example, it's my guess that most engineers are currently engaged in trying to meet the filing deadline. I don't know how anybody could slip in the ability to do these

evaluations.

MR. SCHWARTZ: All right. I think we're ready to move into our general question period. Operator, have you been keeping track of time? How much time have we burned up in this?

OPERATOR: We've burned up about an hour and three minutes. And we do have an additional question from Phil Duncan of NCOC.

MR. SCHWARTZ: Well, I want to hold that for a moment, Operator, if we can put that in the general question period.

OPERATOR: Absolutely.

MR. SCHWARTZ: We've got three more sections in the call. We've got general comments. These are comments that can be directed to any participant. I do ask that they be directed to a specific person, however. And we'll take this for roughly 20 minutes. Then we're going to have a section where the panelists -- I'll go through a rotation of panelists, the same order that they spoke in, give them a chance to direct questions to each other. And then, we'll have closing remarks.

Why don't we start with Phil's question as the first question for the general comment period. Phil, are you with us?

OPERATOR: Your line is open.

MR. DUNCAN: John, can you hear me now?

MR. SCHWARTZ: Yes. Go right ahead.

MR. DUNCAN: Actually, the Arizona State question, to some degree, answered what I wanted to ask. But Bob, or anyone, if I'm an ITFS, and I want to make an application in the window, and I come to you today, and I tell you that I want to do that -- I'm not talking about an evaluation of what World Com or Spring has done. I want to make my own application.

What can you tell me about the possibility of doing that, and which of the software programs, if either, you know, would produce the most reliable information to enable me to file with some reasonable belief that, you know, I'm filing an accurate application?

MR. SCHWARTZ: To which panelist are you directing this question?

MR. DUNCAN: I guess, you know, Bob. Bob was talking about, you know, having to send away business and the time involved. I mean, I want to file. Let's say I want to file, and I want to file something. I'm trying to get an idea about what something is.

MR. SCHWARTZ: Okay, Bob?

MR. GEHMAN: Well, we sent somebody away

yesterday. You know, people are still -- I don't know why it takes so long to get word of these things. But we sent away an
ITFS -- I mean an MDS licensee yesterday. We just told them there was no way to meet the filing deadline.

Now, frankly, somebody who asks for work yesterday is probably a little late. I mean, you know, I wouldn't support extending the filing period for somebody who, you know, waits that long. But on the other hand, I can't tell him yet how long it would take to do his -- Everybody wants to know how long will it take to do, to prepare an application.

And frankly, until you start the work, you don't know what you're getting into. You don't know how many stations there are. You don't know if you're working with a channel that is, you know, heavily encumbered. You may have, you know, 60 stations to at least take a look at initially. You can probably eliminate a lot of them because they're beyond line of sight. But, you know, this is all data that has to be entered and evaluated before you can have any kind of an idea of what kind of computer time it's going to take to make the evaluations.

MR. DUNCAN: Well, we've been asking, you know, that question for several weeks ourselves, and I'm still

trying to get an answer to, you know, what sort of filing some engineer could make to meet the deadline of the window, and I'm trying to get an idea of the scope of the service that you would offer to provide; you know, is there something that you can file within the window that would at least get your started?

Now, I don't want to belabor the point. But if somebody can respond to that, it would be helpful.

MR. HIDLE: This is John HIDLE with Carl D. Jones Corporation. Could I respond to your question, from our point of view?

MR. DUNCAN: Sure, please.

MR. HIDLE: I believe you're way too late. We have been turning away people. I think we turned away three yesterday and two this morning, and several in the week or so before that. We just can't take on any more work. I don't believe we're going to be able to finish the work we already have committed to. So I'm sorry, but that's the way it looks right now.

We -- I can tell you this, that we are estimating that it would take approximately, for a simple application, somewhere in the neighborhood of 10 days to 20 days to do, to complete for someone who had other than just a super cell idea. And we don't exactly believe that the super cell is